

Data Sheet

B18R RNA (human codon optimized)

Synthetic RNA

SCR723
Pack Size 10 µg
Store at -80°C
FOR RESEARCH USE ONLY
Not for use in diagnostic procedures. Not for Human or Animal Consumption.

Background

Simplicon® is a novel system to effect immediate high sustained protein expression of multiple genes into transfected cells without the risk of genome integration. The technology employs a single, synthetic, polycistronic, self-replicating RNA based on the Venezuelan equine encephalitis (VEE) genome^{1,2,3}. The Simplicon® RNA contains only genes encoding the VEE RNA replication machinery while the structural proteins that are required to make an infectious particle have been removed and replaced with the transgenes of interest.

Introduction and replication of the Simplicon® RNA is expected to elicit a strong interferon response in transfected cells. To suppress the IFN responses, a Vaccinia virus protein⁴, B18R, is used for the original Simplicon® technology.

The B18R RNA (human codon optimized) is a synthetic mRNA that is co-transfected with the Simplicon® RNA to suppress the IFN responses. B18R RNA can also be used to prepare B18R conditioned medium by transfection into HFFs (Cat. No. SCC058). B18R RNA can also be used for co-transfection of any mRNAs to suppress the IFN responses and enable repeated transfection of mRNAs. Please refer to the User Guide for the Simplicon® Expression System located on our website (www.emdmillipore.com) for detailed protocols.

Quality Control Testing

- Discrete RNA band on RNA gel of appropriate size.
- 30-60% GFP-positive human foreskin fibroblasts (HFFs) with FACS analysis

Storage and Handling

- B18R RNA (human codon optimized): (Cat. No. CS224516) One (1) vial containing 10 µL of RNA (1 µg/µL). Store at -80°C.

For best recovery, quick spin the vials after thawing on ice. Do not vortex. Aliquot into sterile, nuclease-free eppendorf tubes on ice and store at -80°C. Limit repeated freeze-thaw cycles

Representative Data



Figure 1. 5' capped RNA was in vitro transcribed. The poly (A) tail was added by an enzymatic poly (A) adenylation reaction. cDNA for B18R was human codon optimized.

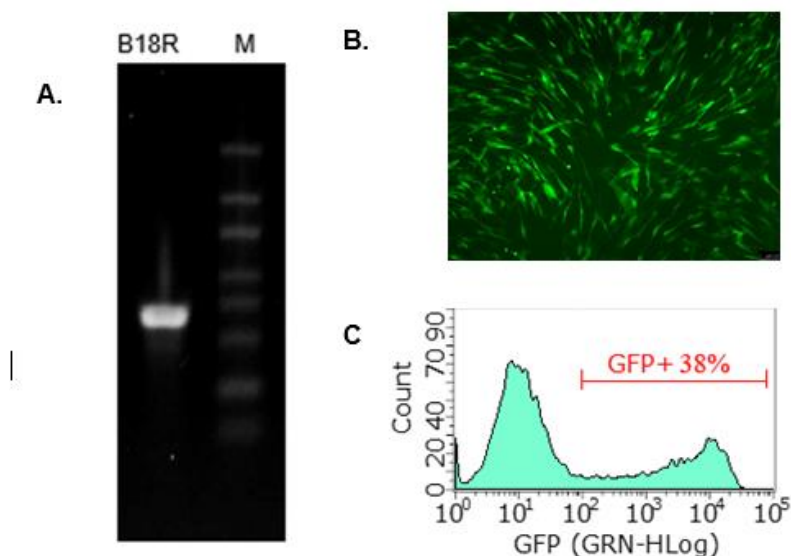


Figure 2. RNA gels and TagGFP2 expression in HFFs. **(A)** B18R RNA gel. Marker: 6, 4, 3, 2, 1.5, 1, 0.5, 0.2 kb **(B, C)** TagGFP2 Simplicon® RNA (E3L) and B18R RNA were co-transfected into HFFs with Messenger Max™ transfection Reagent. One day after transfection, GFP expression was analyzed by fluorescence microscopy and FACS.

Related Products

Cat No.	Description
SCR720	TagGFP2 Simplicon® RNA (E3L) Kit
SCR721	TagRFP Simplicon® RNA (E3L) Kit
SCR722	B18R-E3L RNA (human codon optimized for B18R and E3L)
SCR724	Simplicon® Cloning Vector (E3L)
SCR725	TagGFP2 Simplicon® Plasmid (E3L)
SCR726	TagRFP Simplicon® Plasmid (E3L)
SCR727	B18R-E3L Plasmid (human codon optimized for B18R and E3L)
SCR728	B18R Plasmid (human codon optimized)
GF156	B18R protein (produced from insect cells)
GF197	B18R protein (produced from HEK 293 cells)

References

1. Yoshioka, N., et. al. Cell Stem Cell 2013, 13(2):246-254.
2. Yoshioka N., and Dowdy SF. PLoS One. 2017;12(7):e0182018. doi: 10.1371/journal.pone.0182018. eCollection 2017.
3. Pegg G., et al. Drug Metabolism and Pharmacokinetics, Volume 33, Issue 1, Supplement, 2018; Pages S33-S34
4. Perdiguero B., and Esteban M. J Interferon Cytokine Res. 2009;29(9):581-98. doi: 10.1089/jir.2009.0073.

Restricted Use Agreement

Subject to local law

THIS PRODUCT MAY ONLY BE USED FOR RESEARCH PURPOSES, WHICH IS FURTHER DEFINED BELOW. BY OPENING THIS PRODUCT, YOU ("PURCHASER") HEREBY REPRESENT THAT YOU HAVE THE RIGHT AND AUTHORITY TO LEGALLY BIND YOURSELF AND/OR YOUR EMPLOYER, AS APPLICABLE, AND CONSENT TO BE LEGALLY BOUND BY THE TERMS OF THIS RESTRICTED USE AGREEMENT. IF YOU DO NOT AGREE TO COMPLY WITH THESE TERMS, YOU MAY NOT OPEN OR USE THE PRODUCT AND YOU MUST CALL MILLIPORESIGMA ("SELLER") CUSTOMER SERVICE (1-800-645-5476) TO ARRANGE TO RETURN THE PRODUCT FOR A REFUND.

"Product" means B18R RNA (human codon optimized) (SCR723).

"Research Purposes" means any internal in vitro research use and specifically excludes the following uses of whatever kind or nature:

- Re-engineering or copying the Product
- Making derivatives, modifications, or functional equivalents of the Product
- Obtaining patents or other intellectual property rights claiming use of the Product
- Using the Product in the development, testing, or manufacture of a Commercial Product
- Using the Product as a component of a Commercial Product
- Reselling or licensing the Product
- Using the Product in clinical or therapeutic applications including producing materials for clinical trials
- Administering the Product to humans
- Using the Product in collaboration with a commercial or non-academic entity

"Commercial Product" means any product intended for: (i) current or future sale; (ii) use in a fee-for-service; or (iii) any diagnostic, clinical, or therapeutic use.

Access to the Product is limited solely to PURCHASER's officers, employees, and students who need to use the Product for Research Purposes. PURCHASER shall comply with all applicable laws in its use and handling of the Product and shall keep it under reasonably safe and secure conditions to prevent unauthorized use or access.

These restrictions will remain in effect for as long as PURCHASER possesses the Product.

PLEASE CONTACT licensing@emdmillipore.com PRIOR TO PURCHASE FOR ANY USE OF THE PRODUCT OUTSIDE OF THIS RESTRICTED USE AGREEMENT.

GMO

This product contains genetically modified organisms.
Este producto contiene organismos genéticamente modificados.
Questo prodotto contiene degli organismi geneticamente modificati.
Dieses Produkt enthält genetisch modifizierte Organismen.
Ce produit contient des organismes génétiquement modifiés.
Dit product bevat genetisch gewijzigde organismen.
Tämä tuote sisältää geneettisesti muutettuja organismeja.
Denna produkt innehåller genetiskt ändrade organismer.

Notice

We provide information and advice to our customers on application technologies and regulatory matters to the best of our knowledge and ability, but without obligation or liability. Existing laws and regulations are to be observed in all cases by our customers. This also applies in respect to any rights of third parties. Our information and advice do not relieve our customers of their own responsibility for checking the suitability of our products for the envisaged purpose.

The information in this document is subject to change without notice and should not be construed as a commitment by the manufacturing or selling entity, or an affiliate. We assume no responsibility for any errors that may appear in this document.

Technical Assistance

Visit the tech service page at SigmaAldrich.com/techservice.

Terms and Conditions of Sale

Warranty, use restrictions, and other conditions of sale may be found at SigmaAldrich.com/terms.

Contact Information

For the location of the office nearest you, go to SigmaAldrich.com/offices.

The life science business of Merck operates
as MilliporeSigma in the U.S. and Canada.

Merck, Millipore and Sigma-Aldrich are trademarks of Merck KGaA, Darmstadt, Germany or its affiliates. All other trademarks are the property of their respective owners. Detailed information on trademarks is available via publicly accessible resources.

© 2023 Merck KGaA, Darmstadt, Germany and/or its affiliates. All Rights Reserved.

Document Template 20768436 Ver 4.0

20327666 Ver 3.0, Rev 20APR2023, SS

